

PITRA, J.; KOVARIKOVA, A.

Chemistry and pharmacology of cardiotonic drugs of vegetable origin.
Česk. farm. 11 no. 3 259-276 Jan '62.

1. Vyzkumny ustav prirodnich leciv, Praha.

(CARDIAC GLYCOSIDES)

KOVARIKOVA, A.; ELIS, J.

Convulsant and paralytic properties of 16-hydroxystrophantidin.
Physiol. Bohemoslov. 11 no.6:535-541 '62.

1. Research Institute for Natural Drugs and Central Pharmacological
Laboratory, Institute of Organic and Biochemistry, Czechoslovak Academy
of Sciences, Prague.

(CARDIAC GLYCOSIDES) (CONVULSIONS) (MUSCLES)

CZECHOSLOVAKIA

KOVARIKOVÁ, A. Research Institute of Natural Drugs, Prague.
(Výzkumny ústav přírodních léčiv, Praha.)

Enterol Absorption of Cardiac Glycosides.

Prague, Československá Farmacie, Vol 11, NO 10, Dec 62, pp 527-529.

Abstract: A part of a lethal dose of digoxin or acetyldigoxin was administered intravenously. After 4 hours titration was continued until the animal's heart stopped. The final quantity of the lethal dose was different when the titration was finished with the original substance from the dose found when the titration was completed with g-strophanthin. This phenomenon is caused by the slow action of digoxin and acetyldigoxin. Similar effect is found when the method of additional titration is used. G-strophanthin gives higher absorption values. The author recommends the whole titration with the original substance. 5 Tables, 7 references, 6 German, 1 Hungarian.

1/1

5

1/1

ARIENT, M.; KOVARIKOVA, H.; CIHAK, A.

Contribution to the determining the N-methyl-2-pyridone-5-carboxamide
in the urine of patients with malignant disease. Coll Cz Chem
27 no.7:1711-1714 JI '62.

1. Department of Clinical Laboratories, Central Military
Hospital Prague, and Institute of Organic Chemistry and
Biochemistry, Czechoslovak Academy of Sciences, Prague.

*

SPONAR, J.; FRIC, I.; STOKROVA, S.; KOVARIKOVA, J.

On heterogeneity of human serum albumin. Coll Cz Chem 28
no.7:1831-1837 J1 '63.

1. Institute of Organic Chemistry and Biochemistry, Czechoslovak
Academy of Sciences, Prague.

PAVLICEK, Z.; KALOUS, V.; KOVARIKOVA, J.

Relation of the M-2 components of the serum to the haptoglobin.
Coll Cz Chem 27 no.7:1593-1597 J1 '62.

1. Institut fur physikalische Chemie, Karlsuniversitat,
Prag.

3

CZECHOSLOVAKIA

SPONAR, J; FRIC, I; STOKROVA, S; KOVARIKOVA, J.

Institute of Organic Chemistry and Biochemistry of the
Czechoslovak Academy of Sciences, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications,
No 7, 1963, pp 1831-1836

"On Heterogeneity of Human Serum Albumin."

KECLIK, M.; FRIC, P.; HUSLAROVA, A.; HORACEK, F.; KOVAROVA, M.;
FRIEDBERGER, V.

Preoperative diagnosis of anicteric obstructions of the
choledochus. Cas. lek. cesk. 104 no. 21:566-572 28 My'65.

1. Interni oddeleni fakultni polikliniky Karlovy University,
v Praze (vedouci: prof. dr. K. Herfort, DrSc.); Centralni
rentgenove oddeleni fakultni polikliniky Karlovy University
v Praze (vedouci: MUDr. F. Horacek) a II. chirurgicke kli-
nika fakulty vseobecneho lekarstvi Karlovy University v Praze
(prednosta: prof. dr. J. Lhotka, DrSc.).

KOVARIKOVA, V.; ZUNA, Vl.

Head injuries in children. Rozhl. chir. 40 no.11:702-706 N '61.

1. II chirurgická klinika v Plzni, přednosta doc. dr. J. Spinka.

(BRAIN wds & inj)

KOVARIKOVA, V.; ZUNA, Vl.; SEBOR, J.

Abscesses of Douglas' pouch as a complication of acute appendicitis.
Rozhl. chir. 41 no.2:139-142 F '62.

1. I chirurg. klinika lek. fak. KU v Plzni, prednosta doc. dr Spinka.

(DOUGLAS POUCH dis) (ABSCESS)
(APPENDICITIS compl)

KOVARNIK, Frantisek

Matematika. Sbirka uloh pro 1. rocnik povolani 6/1 - zednik, 6/2 - fasadnik-stukater-modelar, 6/3 - tesar, 6/4 - zelezar-betonar, 6/10 - kamenik. (Mathematics; a Collection of Problems for the 1st Grade of the Training in the Occupations 6/1; Bricklayer, 6/2: Plasterer, Stucco Plasterer, Molding Plasterer, 6/3: Carpenter, 6/4: Concrete-Block Mason, 6/10: Stonecutter. 1st ed. illus.) Prague, SNTL, 1957, 31 p.

Bibliograficky katalog, CSR, Ceske knihy, No. 36. 15 Oct 57. p. 779-80.

KOVAROV, Sergei Georgievich

Technology of industrial geophysics; trepanning and operations in the shafts Moskva, Gos. nauch.-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1947. 487 p. (48-24092)

1. Geophysics. 2. Prospecting

KOVAROVA, A., MUDr.

Health education in Peoples German Republic. Cesk. zdravot.
4 no.8:481-483 Aug 56.

1. Ustredni ustav zdravotnicke osvety v Praze.
(HEALTH EDUCATION,
in E. Germany (Cz))

KOVAROVA, A.

KOVAROVA, Anna

Health education in Italy. Cesk. zdravot. 5 no.12:720-724 Dec 57.

1. Ustredni ustav zdravotnicke osvety.
(HEALTH EDUCATION
in Italy (Cz))

KOVAROVA, A., MUDr.

Health education films in rural localities. Studies and comparisons of the effectiveness of popular documentation and narrative health education films in a rural locality. Cesk.zdravot. 7 no.11:707-710 D '59.

1. Ustredni ustav zdravotnicke osvety v Praze.
(HEALTH EDUCATION)
(RURAL HEALTH)
(MOTION PICTURES)

DOUTLIK, S.; JANDA, V.; LYSA, A.; KOVAROVA, B., techn. spoluprace

Clinico-electroencephalographic studies in varicella encephalitis.
Cesk. neurol. 23(56) no.7:444-450 '60.

1. Infekcni klinika fakulty detskeho lekarstvi KU, prednosta prof.
dr. J. Prochazka Neurologicka klinika lekarske fakulty hygienicke
KU, prednosta doc. dr. Z. Macek.

(CHICKENPOX compl) (ENCEPHALITIS etiol)
(ELECTROENCEPHALOGRAPHY)

JINDRAK, Karel; KOVAROVA, Dana...

Talc granuloma of the endometrium. Sborn. ved. prac. lek. fak.
Karlovy. Univ. 8 no. 4: 505-510 ' 65.

1. Patologicko-anatomicky ustav (prednosta: prof. MUDr.
A. Fingerland, DrSc.) z Gynekologicko-porod. odd. nemocnice,
Trutnov (prednosta: prim. MUDr. J. Vajsochr).

STANKOVIANSEKY, S.; KOVAROVA, H.; MADAJOVA, V.

Study of reactions of some derivatives of 1,3 indandione with regard to their analytical use. Pt.1. Acta r nat Univ Com 9 no.5:273-284 '65.

1. Chair of Analytical Chemistry of the Faculty of Natural Sciences of Comenius University, Bratislava. Submitted December 20, 1963.

ROUS, J.; KOVAROVA, J.

Contribution to the problem of the relation between olfactory disorders to changes in the pH of the nasal mucosa in allergic rhinitis. Cesk. otolaryng. 12 no.2:92-98 Mr '63.

1. Klinika nemoci usnich, nosnich a kronic lekarske fakulty
KU v Plzni, prednosta prof. dr. F. Kotyza.
(HYDROGEN ION CONCENTRATION) (HAY FEVER)
(NASAL MUCOSA) (SMELL)

KECLIK, M.; HORACEK, F.; KOVAROVA, M.; FRIG, P.

Contribution to the diagnosis of incomplete bile duct obstruction by intravenous cholangiography. Cesk. gastroent. vyz. 17 no.7:402-410 N°63

1. Interni oddeleni fakultni polikliniky v Praze (vedouci prof. dr. K. Herfort) a Centralni rentgenove oddeleni fakultni polikliniky v Praze (vedouci MUDr. F.Horacek).

HRUSKA, Vaclav, podplukovník dr.; TOCIK, Michal, podplukovník dr.;
Technická spolupráce: KOVAROVA, Marcela; HABA, Miloslav

Fungicidal effect of peracetic acid on meat microflora. Voj.
zdrav. listy 34 no.5:215-217 0 '65.

Possible use of peracetic acid in fruit and vegetable disinfection. Ibid.:217-220

1. Hygienicko-epidemiologický oddíl Plzeň.

KOVAROVA, Y.

KOVAROVA, V., MUDr ; MICHALICKOVA, J., MUDr

Influenzal infections in infants. Pediat. listy 9 no.2:116-118
Ap '54.

1. Virolog. ustav Cs. akademie vied, prednosta akademik D.Blaskovich,
Bratislava. II. detska klinika SU v Bratislave, prednosta MUDr
J.Michalickova.

(INFLUENZA, in infant and child,)
*

KOVAROVA, V.

BLASKOVIC, D.; KOVAROVA, V.

Epidemiologic and laboratory considerations on 1952-1953 winter and 1953 April epidemics in Slovenia. Bratisl. lek.listy 34 no.8: 841-851 Aug 54.

1. Z Virologickeho ustavu Cs. akademie vied, riaditel akademid D.Blaskovic, a z Oblastneho ustavu epidemiologie a mikrobiologie v Bratislave, riaditel dr. J.Karolecek.
(INFLUENZA, epidemiology,
in Czech.)

KOVAROVA, V.

THURZO, Viliam, MUDr.; SLABEYCIUSOVA, Maria, MUDr.; KLIMEK, Milos, MUDr.;
KOVAROVA, Valeria, MUDr

New filtrable fowl tumor. Cesk.onkol. 1 no.3-4:230-234 1954.

1. Issledovatel'skii institut Onkologii, Bratislava, ul. Cs.
armady 17.

(NEOPLASMS, experimental,
myxosarcoma, filtrable in fowl)
(MYXOSARCOMA, experimental,
filtrable in fowl)

KOVAROVA, V.

SMIDA, J., Inz.; KOVAROVA, V., MUDr (Bratislava, ul. CSA 17)

Comparison of two method of purification of fowl tumor B77 virus
by precipitation with ammonium sulfate and by fractional centri-
fugation. Cesk.onkol. 2 no.2-3:149-155 1955.

1. Vyskumny ustav onkologicky v Bratislave.

(NEOPLASMS, viruses,

fowl tumor B77 virus, purification by ammonium sulfate
precipitation & centrifugation)

(VIRUSES,

fowl tumor B77 virus, purification by ammonium sulfate
precipitation & centrifugation)

... MEDICA Sec 10 Vol 10/11 Obstetrics Nov 57
2045. KOVÁROVÁ V., SIRACKÝ J. and ŠIMKOVIC D. Oncol. Res. Inst., Bratislava. * Attempt at serial passaging of Ca cervicis uteri onto the chorionallantoic membrane of chick embryos
ČSL.ONKOL. 1956, 3/3 (201-204) Illus. 2
Of 9 human squamous cell cervical carcinomata it is claimed that 4 were cultivated on the chorionallantoic membranes of 10-day embryonated hen eggs, carcinoma tissue being demonstrable up to the third passage. Prolonged cultivation in vitro was not achieved with any of the tumours.
Hewitt - London (V, 10, 16)

CZECHOSLOVAKIA / General Problems of Pathology.
Immunity.

U

Abs Jour: Ref Zhur-Biol., No 9, 1958, 41864.

Author : Cravec, C., Holoubek, V., Kovarova, V., Klimec, M.,
Bazany, M.

Inst : Not given.

Title : The Properdin System in a Tumorous Disease. IV.
The Level of Properdin in Guinea Pigs Treated
with Cortisone, X-rays and with Herpes Virus.

Orig Pub: Neoplasma, 1957, 4, No 1, 7-9.

Abstract: The investigations were conducted in connection
with the effectiveness of experiments on hetero-
transplantation of tumors with application of cor-
tisona and X-ray irradiation. Guinea pigs were
injected, for a period of 5 days, with 2.5 mg of
cortisone acetate intra-abdominally, or were once
irradiated with 600 r, or were infected intrader-

Card 1/2

KOVAROVA, VALERIA
SMIDA, Julius; HOLOUBEK, Viktor; KOVAROVA, Valeria; ORAVEC, Ctirad

Some aspects on the immunobiological behavior of the virus tumour B-77.
Neoplasma, Bratisl. 4 no.4:327-333 1957.

1. Oncological Research Institute, Bratislava.
 - (VIRUSES, eff.
 - tumor B 77 virus, on hemagglut.)
 - (HEMAGGLUTINATION
 - eff. of tumor B 77 virus)
 - (NEOPLASMS, exper.
 - eff. of tumor B 77 virus on hemagglut.)

KOVAROVIC, J.; FRIED, A.

Blood modifications following infectious hepatitis. Voj.zdrav. listy
19 no.11-12:266-267 Nov-Dec 50. (CLML 20:5)

KOVAROVSKAYA, A. A.

27619

Drobnoe Otkrytie Kadmiya. Zhurnal Obshchey Khimii, 1949, Vyp. 8, s. 1459-60. Bibliogr; S. 1460.

SO: Letopis' Zhurnal'nykh Statey, Vol. 37, 1949

KOVARSKAYA, B.M.; TANUNINA, P.M.; LEVATOVSKAYA, I.I.; LITVAE, L.P.;
KIRPICHNIKOV, P.A.; GURVICH, Ya.A.

Effect of stabilizers on a prolonged thermal oxidative aging of
the polyamide "68." Plast. massy no.8:7-8 '65. (MIRA 18:9)

GINTSBERG, E.G.; CHIBISOVA, Ye.I.; KOVARSKAYA, B.M.

Polarographic analysis of the products of thermal oxidative degradation of polyester resins based on maleic and chlorogenic anhydrides and ethylene glycol. Plast. massy no.10:42-44 '65. (MIRA 18:10)

Card 1/1

UDC: 678.644'141.048.2
2

BC

Solvation in disperse systems. I. Solvation of rubber in dispersion media of different polarities. II. Thermo-mechanical properties of rubber sols. V. MARGARITOV. III. Light-scattering by rubber sols in media of different polarities. V. MARGARITOV and B. KOVARSKAJA (Acta Physicochim. U.R.S.S., 1957, 7, 707-726; 1958, 8, 271-278, 279-289).—I. Two types of solvents for rubber are distinguished. (i) hydrocarbons with a strong aptitude for surface solvation, the primary adsorbed layer protecting the micelle from osmotic swelling, and (ii) solvents characterized by small mol. dimensions, which penetrate into the micelles and cause osmotic swelling.

II. Rubber sols have been investigated (a) to study the effect of the mol. nature of the solvent on their mechanical properties, and (b) to determine the variation of the yield val. on cooling in different solvents under such conditions that the solvent does not freeze. The results indicate that the high mechanical strength of rubber sols in solvents (ii) is due to vol. solvation, developed by the swelling of micelles which become the centres of a gel which sets at a temp. > the f.p. of the pure solvent; rubber sols in solvents (i), with advanced surface solvation, form no gels on cooling.

III. The variation of the intensity of scattered light with the concn. of rubber sols and sols of Na divinyl polymeride has been studied in various solvents. The abs. turbidity X_1 of the rubber sols decreases as the solvent passes up the series of hydrocarbons. The variation of $1/X_1$ with dilution is linear.

W. R. A.

ASB-SLA DETALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS		PROCESSES AND PROPERTIES INDEX		180 AND 4TH ORDERS	
<p>Surface solvation in disperse systems. IV. Desolvation of rubber sols in media of different polarities. V. MARGARITOV and B. KOVARSKAJA (Acta Physicochim. U.B.S.S., 1938, 8, 377-384).-- The coagulation of rubber sols in C_6H_6, C_6H_{14}, C_2HCl_3, CCl_4, C_6H_6, and cyclohexane by $COMe_3$, and in C_6H_6, cyclohexane, and C_6H_6 by $PrOH$, $BuOH$, and $C_6H_{11}OH$ has been investigated. The amount of $COMe_3$ or $PrOH$ or $BuOH$ required to coagulate the sols increases with the mol. wt. of the dispersion media. $C_6H_{11}OH$ produces no coagulation of rubber sols in C_6H_6 or C_6H_{14}. Systems in which surface solvation is probable (C_6H_{14}) are more stable than those in which rubber undergoes vol. solvation (CCl_4).</p> <p style="text-align: right;">L. S. T.</p>					
<p>ASB-35A METALLURGICAL LITERATURE CLASSIFICATION</p>					
<p>1ST AND 2ND ORDERS</p>					

(17 AND TWO SEVEN)
CONTENTS AND PROPERTIES INDEX

BE
B-11-9

Colloidal and chemical investigation of different brands of (rubber) latex: natural latex, latex, Polysar, Polysar-A, and Revulox. B. A. DOGADIN and B. M. KOVACHUKA, Caoutchouc & Rubber, USSR, 1958, 23-24, Rubber Chem. & Tech., 1958, 31, 830-843. A comparison is made of these five brands as to η , relative stability towards electrolytes and at different temp., and compatibility with compounding ingredients. The η of latex begins to rise sharply at >40% concn, structural η then coming into play; addition of NH_4 or NaOH decreases the η , but an increase occurs initially with Butadiene T. With various electrolytes the coagulating power increases with the valency of the cation.

D. F. T.

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION
E-27-11-11-11-11

SEARCHED YES

SEARCHED MAY ONE ONE

REEL ONE

REEL ONE ONE ONE

SEARCHED YES

SEARCHED MAY ONE ONE

REEL ONE

REEL ONE ONE ONE

CA 30

PROCESSES AND PROPERTIES INDEX

Influence of the nature of solvent on the properties of fractions of natural rubber. B. M. Kovarskaya and S. M. Lipatov. *Colloid J. (U. S. S. R.)* 5, 767-70 (1939); cf. C. A. 34, 9231. — Solns. of pale crepe rubber in Et₂O and in C₆H₆ were pptd. by EtOH in steps, and the 6 fractions were dissolved in various solvents. The viscosity of these solns. showed a behavior inconsistent with the theory of Staudinger (cf. C. A. 32, 3236). (1) Two of the 6 fractions gave viscosities not proportional to the concn. (2) The fractions from Et₂O had lower viscosities than those from C₆H₆; this shows that the solvent affected the properties of the rubber. (3) The apparent mol. wt. of a fraction depended on the solvent used for measurements of η . (4) The ratio of the viscosities of 2 fractions depended on the solvent. (5) The η value of a mixt. of 2 fractions was not equal to the sum of the single viscosities; this indicates an adsorption of smaller mols. by larger micelles.

T. J. Bikerman

430.554 METALLURGICAL LITERATURE CLASSIFICATION

KOVARSKAYA, B. M. Cand. Chem. Sci.

Dissertation: "Physicochemical Investigation of the Degrees of Dispersion and Hydrophobization of Cellulose Fillers for Condensation Plastics."
Inst of Physical Chemistry, Acad Sci USSR, 5 Jun 47.

SO: Vechernyaya Moskva, Jun, 1947 (Project #17836)

KOVARSKAYA, B. M.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Synthetic Resins and Plastics

(2) 3
The viscoelastic properties of phenol-formaldehyde resins.
B. M. Kovarskaya and S. I. Kiaz. *Chemid J. (U.S.S.R.)*
14, 466-70(1952)(Engl. translation).—See C.A. 47, 36074.
H. L. H.

USSR/Chemistry - Plastics

FD-963

Card 1/1 Pub. 50 - 6/19

Authors : Kovarskaya, B. M., Cand Chem Sci; Kanavets, I. F., Cand Tech Sci;
Tsipes, L. Ya., Cand Tech Sci

Title : Quantitative determination of the adhesion of thermosetting pressing composition to the surface of pressure molds

Periodical : Khim. prom., No 7, 410-412 (26-28), Oct-Nov 1954

Abstract : Developed and describe a method of measuring the adhesion of pressing compositions to the mold with the aid of a plastometer designed by Kanavets. Make recommendations for operational procedures which will reduce adhesion. One reference, USSR, since 1940. Four tables, 3 graphs.

Institution : Scientific Research and Planning Institute of Plastics.

KOVARSKAYA, B.M.

Solubility of phenol-formaldehyde resins. G. L. Sidorov, B. M. Kovarskaya, and S. I. Kiselev (Sci. Research Inst. Plastics, Moscow). *Kolloid. Zhur.*, 16, 390-5 (1954).
 Plastics of the novolak type contg. <1% hexamethylenetetramine (I) and plastics contg. any amt. of I but cured below 120° were sol. in EtOH and cyclohexanone (II). Plastics contg. 1-5% I and cured above 120° or contg. >5% I and cured at 150°-180° swelled in II; the mech. properties of their gels were studied. Plastics contg. >5% I and cured above 180° did not swell or dissolve, and their modulus of elasticity was at a 2nd deformation greater than at the first. J. J. Bickerman.

KOJARSKAYA, B. M.

✓ Setting of urea-formaldehyde resins. B. M. Kojarskaya, O. I. Slonimskii and V. A. Kargin (Sci. Research and Prod. Inst. Plastics, Moscow); Naklad. Zhur. 17, 438-39 (1956); cf. CA 50, 3795b. Urea-formaldehyde resins (not further characterized) pass 3 stages during setting. During stage 1, the resin is a liquid fully sol. in H_2O and freezing to a glass at 0° to -5° . During stage 2, it contains 40-50% H_2O , is only partially sol. in H_2O and alcs., is glassy below 0° and freely flowing above 60° ; as it has no yield stress, it probably contains only linear chains longer than those of the first stage. During stage 3, the resin is solid but, probably, still consists of linear polymers, since resins plasticized with CaH_2O_2 (e.g., 20%) become viscous liquids on heating (e.g., to 180°). J. J. Bikerman

2 May 6

NA 20

(2)

KOVANSKAYA, B. M., GOLUBENKOVA, L.Y., AKUTIN, M. N., and SLOMINSKIY, G. L.

"Epoxide Resins and thermomechanical properties," a paper presented
at the 9th Congress on The Chemistry and Physics of High Polymers, 28 Jan-2 Feb
57, Moscow, Plastics Research Inst.

B-3,004,395

Kovarskaya, B.M.
KARGIN, V.A., akademik; KOVARSKAYA, B.M.; GOLUBENKOVA, L.I.; AKUTIN, M.S.;
SLONIMSKIY, G.L.

Block-copolymer from phenol-formaldehyde resins and nitrile
rubber. Dokl. AN SSSR 112 no.3:485-486 Ja '57. (MLRA 10:4)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy
institut plasticheskikh mass.
(Nitrile rubbers) (Phenol condensation products)

AUTHORS: Rogovin, Z. A., Kovarskaya, B. M. SOV/156-58-2-40/48

TITLE: Investigation of the Thermomechanical Properties of Stereoregular Polypropylene (Issledovaniye termomekhanicheskikh svoystv stereoregulyarnogo polipropilena) (9. Publications From the Series "Investigations in the Field of the Production of New Types of Carbochain-Fibers") (9-ye soobshcheniye iz serii "Issledovaniya v oblasti polucheniya novykh tipov karbotsepnykh volokon")

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 361 - 364 (USSR)

ABSTRACT: The determination of the change of elasticity as well as of fluidity of the plastic at increased temperatures of processing plays an important role in the investigation of the properties of the polypropylene mentioned in the title. The determination of the influence of its molecular weight and the phase state (whether amorphous or crystalline) is of equal importance for the change of the mentioned properties. The optimum parameters of the technological process cannot be determined without a sufficient study of the

Card 1/4

Investigation of the Thermomechanical Properties of SOV/156-58-2-40/48
Stereoregular Polypropylene. (9. Publications From the Series "Investigations
in the Field of the Production of New Types of Carbochain-Fibers")

mentioned problems. For this reason these factors are investigated in detail. In order to determine the characteristics of fluidity at increased temperatures the Kargin (Refs 1-3) dynamometric balance was used. The determinations were carried out under the action of a permanent stress ($\sigma=0,3$ kg/cm²) on a standard sample (diameter: 10 mm, height: 5 mm) during 10 seconds. A polypropylene preparation produced by Krentsel and his collaborators in the Topchiyev Laboratory served as base material. The amorphous product was isolated by extraction with toluene at 20° from the propylene sample. Fractionation was carried out according to a method due to the second author (Ref 4). On figure 1 the thermomechanical curves of the individual amorphous fractions which deviate from each other by up to 30 times (as to the value η) are shown. The authors draw the following conclusions from the results: 1) It was proved that the increase of the molecular weight of the amorphous as well as of the crystalline polypropylene considerably influences the increase of temperature

Card 2/4

Investigation of the Thermomechanical Properties of SOV/156-58-2-40/48
Stereoregular Polypropylene. (9. Publications From the Series "Investigations
in the Field of the Production of New Types of Carbochain-Fibers")

of its fluidity. 2) As is the case with other polymers
also here a difference in the character of the curves of
the amorphous fractions on the one hand and of the crystalline
fractions on the other hand was observed. The determination
of the shape of these curves may furnish one of the criteria
of the phase state of those fractions which are isolated
from stereoregular synthetic polymers. L.A. Fedorova collaborated
in the experimental part of the investigations. There are
2 figures and 4 references, which are Soviet.

ASSOCIATION: Kafedra iskusstvennogo volokna Moskovskogo tekstil'nogo
instituta (Chair of Plastic Fibers of the Moscow In-
stitute of Textiles)

SUBMITTED: December 23, 1957

Card 3/4

Investigation of the Thermomechanical Properties of SOV/156-58-2-40/48
Stereoregular Polypropylene. (9. Publications From the Series "Investigations
in the Field of the Production of New Types of Carbochain-Fibers")

Card 4/4

KOVARSKAYA, B.M.

69-20-1-5/20

AUTHORS: Golubenkova, L.I., Kovarskaya, B.M., Akutin, M.S., Slonimskiy, G.L.

TITLE: Thermomechanical Investigation of Epoxide Resins (Termomekhanicheskoye issledovaniye epoksidnykh smol)

PERIODICAL: Kolloidnyy Zhurnal, 1958, Vol. XX, # 1, pp 34-37 (USSR)

ABSTRACT: Epoxide resins may be either thermoplastic or thermoreactive, depending on the initial diphenyl propane and epichlorohydrine components. Thermoreactivity begins at a molar ratio of 1 : 1.5 of the initial components and at a further decrease of the epichlorohydrine content. The thermomechanical curves of the initial resins were obtained on a dynamometric scale. The solidified specimens were measured on a consistometer. Epoxide resins are low-molecular, i.e. they pass from the vitrified condition into a viscous-fluid one. The vitrification temperature varies between 5-50°C. Solidified resins are prepared by using a hardening agent, polyethylenepolyamine, for 30-45 days. The reduction of the epichlorohydrine content to a ratio of 1 : 1.2 and a 10-hour heating at 200°C produces the resin type ED-15, which is elastic at increased temperatures.

Card 1/2

Resins with lower numbers of epoxide groups are more elastic

Thermomechanical Investigation of Epoxide Resins

69-20-1-5/20

at increased temperatures than those with higher numbers.
Thermoreactive resins, solidified without addition of a hardening agent, have a higher heat resistance and have a better appearance than those solidified by amines and resol resins.

There are 5 figures, 1 table, and 6 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy i proyektnyy institut plasticheskikh mass, Moskva (Scientific Research and Designing Institute for Plastics, Moscow)

SUBMITTED: January 25, 1957

AVAILABLE: Library of Congress

Card 2/2

PETROV, G.S. [deceased]; LEVIN, A.N.; GARBAR, M.I., red.; KOVARSKAYA,
B.M., red.; SHPAK, Ye.G., tekhn.red.

[Thermosetting resins and plastic materials] Termoreaktivnye
smoly i plasticheskie massy. Pod red. M.I.Garbara. Moskva,
Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1959. 309 p. (MIRA 13:2)
(Resins, Synthetic) (Plastics)

GOLUBENKOVA, L.I.; KOVARSKAYA, B.M.; LEVANTOVSKAYA, I.I.; AKUTIN, M.S.

Mechanism of the hardening of epoxy resins with amines. Vysokom.
soed. 1 no.1:103-109 Ja '59. (MIRA 12:9)

1. Nauchno-issledovatel'skiy i proyektnyy institut plasticheskikh
mass.

(Resins, Synthetic) (Amines)

GOLUBENKOVA, L.I.; KOVARSKAYA, B.M.; AKUTIN, M.S.

Thermomechanical investigation of epoxy resins. Vysokom.sood.
1 no.1:109-113 Ja '59. (MIRA 12:9)

1. Nauchno-issledovatel'skiy i proyektnyy institut plasticheskikh
mass.

(Resins, Synthetic)

KOVARSKAYA, B.M.; GOLUBENKOVA, L.I.; AKUTIN, M.S.; LEVANTOVSKAYA, I.I.

Preparation of some block polymers and investigation of their properties.
Vysokom.sped. 1 no.7:1042-1047 J1 '59. (MIRA 12:11)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.
(Polymers)

MEYMAN, M.B.; GOLUBENKOVA, L.I.; KOVARSKAYA, B.M.; STRIZHKOVA, A.S.;
LEVANTOVSKAYA, I.I.; AKUTIN, M.S.; MOISEYEV, V.D.

Thermal degradation of condensation resins. Part 1: Thermal
degradation of epoxide resins. Vysokom.soad. 1 no.10:
1531-1537 0 '59. (MIRA 13:3)

1. Nauchno-issledovatel'skiy institut plastmass, Moskva.
(Resins, Synthetic)

KOVARSKAYA, B.M.

PHASE I BOOK EXPLOITATION

SOV/1984

International symposium on macromolecular chemistry. Moscow, 1960.

Mezhdunarodnyy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i avtoreferaty. Sektsiya III. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries) Section III. [Moscow, Izd-vo AN SSSR, 1960] 469 p. 55,000 copies printed.

Tech. Ed.: P. S. Kashina.

Sponsoring Agency: The International Union of Pure and Applied Chemistry. Commission on Macromolecular Chemistry.

PURPOSE: This book is intended for chemists interested in polymerization reactions and the synthesis of high molecular compounds.

COVERAGE: This is Section III of a multivolume work containing papers on macromolecular chemistry. The articles in general deal with the kinetics of polymerization reactions, the synthesis of special-purpose polymers, etc. Methods of ester exchange resins, semiconductor materials, etc. Methods of esterizing polymerization reactions, properties and chemical interactions of high molecular materials, and the effects of various factors on polymerization and the degradation of high molecular compounds. No personalities are mentioned. References given follow the articles.

Bar'yev, V. M., A. M. Kraydenkov, and S. S. Medvedev (USSR). The Effect of Formic Acid and Formates on the Oxidation of Hydrocarbons and Hydrocarbon Polymers 364

Rozova, Z. V., and D. M. Yannyukiy (USSR). Study of the Effect of Some Organic and Organometal Compounds on the Thermal Degradation of Polyvinyl Chloride 372

Wichterle, O., E. Štělka, and P. Čefelín (Czechoslovakia). Degradation of Poly-ε-Caprolactam as a Result of Exchange Reaction Between Amide Bonds 380

Kučera, M. J., J. Láňková, and M. Fejlský (Czechoslovakia). Neutralization of Residual Catalyst in Polydimethylsiloxane: Effect of Thermal Neutralization on the Thermal Stability of the Polymer 388

Česerl, I., O. Májek, and I. Šímal (Czechoslovakia). Thermochemical Degradation of Polyesters. Study of Degradation Reactions for Different Types of Linear Polyesters 405

Kerman, M. B., B. M. Kovarskaya, L. I. Golubenkova, A. S. Shchegoleva, A. Levantovskaya, and M. N. Akutin (USSR). On the Degradation and Stabilization of Some Polymeric Materials 414

Aspert, J. O., and A. S. Kuz'minskij (USSR). Investigation of the Efficiency of Inhibitors of Rubber Oxidation at Various Temperatures 423

Pravdinikov, A. N., and Xing Wen-M'ang (USSR). Mechanism of the Protective Action of Benzene Rings During the Radiolysis of Polystyrene 433

Zhdanov, A. I., and K. A. Andrianov (USSR). On the Hydrolytic Stability of Side Groups in Polymers with Inorganic Chains of Molecules 440 25

Berlin, A. A., Ye. A. Penskaya, and G. I. Volkova (USSR). Mechanism of Transformation and Block Copolymerization During the Freezing of Starch Solutions 334

Usmanov, Kh. H., B. I. Akhmedov, and U. Azizov (USSR). Modification of the Properties of Cellulose by Grafting 344 23

85142

S/191/60/000/007/005/015
B004/B056

15.8110

11.2217

AUTHORS:

Neyman, M. B., Kovarskaya, B. M., Levantovskaya, I. I.,
Strizhkova, A. S., Akutin, M. S.

TITLE:

Investigation of the Thermal Destruction of Condensate
Resins. The Thermal Destruction of Hardened Epoxy Resins 16

PERIODICAL:

Plasticheskiye massy, 1960, No. 7, pp. 17 - 20

TEXT: Following an earlier paper (Ref. 1) on the thermal destruction of ED-6 (ED-6) epoxy resin, the authors give a report on their investigation of the thermal destruction of ED-15 (ED-15) epoxy resin obtained by condensation of epichlorohydrin with diphenylpropane, as well as of ED-15 and ED-6 hardened with 7% polyethylene polyamine or with 30% maleic anhydride. They give the following experimental data: Kinetics of gas formation in the thermal destruction of ED-15 (Table 1, Fig. 1) on the basis of the chromatographical analysis by means of ~~UKhT-2~~ UKhT-2) or the Griffin apparatus (Fig. 2, chromatogram); kinetics of gas formation in ED-15 (Fig. 3) hardened with polyethylene polyamine and ED-15 hardened with maleic anhydride (Fig. 4); degree of decay of the hardened ED-6 as a

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B020/B066

15.8m

AUTHORS:

Kamenskiy, I. V., Ungurean, N. V., Kovarskaya, B. M.,
Itinskiy, V. I.

TITLE:

Polymers on the Basis of Condensation Products of Furfurole
With Acetone. Report No. 2. Hardening of Furfurylidene- and
Difurfurylidene Acetone in the Presence of Acid Catalysts

PERIODICAL: Plasticheskiye massy, 1960, No. 12, pp. 9 - 13

TEXT: Investigations carried out in recent years by the kafedra plasticheskikh mass MKhTI im. D. I. Mendeleyeva (Department of Plastics of the Moscow Institute of Chemical Technology imeni D. I. Mendeleyev) and NIIPM (Nauchno-issledovatel'skiy institut plasticheskikh mass = Scientific Research Institute of Plastics) revealed that condensation products of furfurole with various ketone form hardening resins in the presence of mineral acids. In the present paper, results of an investigation of the formation and cure of polymers on the basis of furfurylidene- and difurfurylidene acetone are given, which are formed in the condensation of furfurole with acetone. The effect of ionic catalysts was thoroughly

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Polymers on the Basis of Condensation Products S/191/60/000/012/004/016
of Furfurole With Acetone. Report No. 2. B020/B066
Hardening of Furfurylidene- and Difurfurylidene
Acetone in the Presence of Acid Catalysts

studied, as these catalysts permit the production of cured polymers. The experiments were made at 70 - 100°C up to resinification, and at 160 - 200°C up to complete cure. The results of studying the effect of some ionic catalysts are presented in Table 1. CdCl_2 and CaCl_2 do not promote resinification, but give with the monomer an infusible complex which is insoluble in organic solvents and decomposes with water. Sulfuric acid is a good catalyst for the cure. The best ionic catalysts were aromatic sulfonic acids. Benzene sulfonic acid has many advantages compared with all other catalysts. It was found by experiments that the cure of furfurylidene acetone proceeds in three steps under the action of ionic catalysts, mainly benzene sulfonic acid: 1) Transition of furfurylidene acetone to a resinous state. The resin is soluble in acetone, dioxane, and other organic solvents; the reaction rate depends on the quantity of catalyst and on temperature. The resin is low-molecular in this state (Fig. 1); transition from the vitreous to the viscous state takes place in a narrow range of temperature. A range of high elasticity could not

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Polymers on the Basis of Condensation Products of Furfurole With Acetone. Report No. 2.
S/191/60/000/012/004/016
B020/B066
Hardening of Furfurylidene- and Difurfurylidene Acetone in the Presence of Acid Catalysts

be found. The bromine number of the resin in this state was 254, as compared to 345 in the case of furfurylidene acetone (Table 2), whereas the oxime number dropped from 422 to 210. The molecular weight of the resin does not exceed 1200. Polycondensation takes place under water separation (Table 3). 2) In the second stage, a resin is formed which is not soluble and only swells in organic solvents. On prolonged cure, an intenser cross-linking of molecules takes place, and deformation of samples decreases (Fig. 2). The conditions for curing samples whose thermomechanical characteristics were determined, are given (Table 4). The rate of curing is temperature-dependent. 3) In the third stage, the cured resin is infusible and insoluble which is characteristic of spatially interlaced polymers. Difurfurylidene acetone polymerizes at 180°C without a catalyst, and is cured in the presence of catalysts, which takes place as well in three steps. Fig. 3 shows the thermomechanical characteristics of three samples whose curing conditions are given in Table 4, and Fig. 4 shows the thermomechanical curves, recorded by a dynamometric scale, for samples obtained by heating to 80°C for 10 - 150 min. Table 6 gives the

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Polymers on the Basis of Condensation Products of Furfurole With Acetone. Report No. 2.
Hardening of Furfurylidene- and Difurfurylidene Acetone in the Presence of Acid Catalysts

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B020/B066

bromine and oxime numbers for difurfurylidene acetone and resin in the first stage of cure. The thermomechanical curves for difurfurylidene resin in the second (Fig. 5) and in the third (Fig. 6) stage of cure are presented. The elementary composition of the cured difurfurylidene acetone resin is given in Table 7. There are 6 figures, 7 tables, and 4 Soviet references. X

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B016/B052

15.8110

AUTHORS: Neyman, M. B., ~~Kovarskaya, B. M.~~, Strizhkova, A. S.,
Levantovskaya, I. I., and Akutin, M. S.

TITLE: The Mechanism of Thermal Destruction of Solidified Epoxy
Resins

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 5,
pp. 1147-1149

TEXT: The authors studied the kinetics of thermal destruction of epoxy resins solidified by maleic anhydride (see scheme) or polyethylene polyamine. They determined the forming radicals by the method of electron paramagnetic resonance. Fig. 1 schematically shows the results obtained from thermal processes: (1) gas separation; (2) weight losses of the residue; and (3) rate of radical accumulation. Considerable amounts of methane, carbon monoxide, formaldehyde, acetaldehyde, and acrolein were found in the gaseous products of destruction. According to the temperature, gas separation stops after 5 - 15 minutes. Thermal destruction, however, continues while liquid products of a comparatively low molecular weight

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86837

The Mechanism of Thermal Destruction of
Solidified Epoxy Resins

S/020/60/135/005/027/043
B016/B052

are distilled from the polymer. The authors suggest the following scheme for the formation of the above products: They assume that the terminal $\text{CH}_2\text{-CH=CH}_2\text{O}$ groups are separated most easily from the polymer. This radical can be isomerized into a $\text{CH}_2\text{-CH-CH=O}$ radical which forms acrolein and hydroxyl. The original radical may also decompose into a CH_2O molecule and a $\text{CH}_2\text{-CH}$ radical. By isomerization of the latter, the acetyl radical $\text{CH}_3\text{-CO}$ may be formed which extracts hydrogen from the epoxy resin and forms acetaldehyde. Finally, the acetyl radical may decompose into CO and CH_3 . By absorbing hydrogen, CH_3 is converted into methane. In all cases, the reaction takes place under the formation of active radicals which cannot accumulate in high concentrations and, therefore, cannot be detected by the e.p.r. method. This is only possible in later stages of the process. The authors assume that the bonds of diphenylol propane which cause the formation of stable radicals, may also be ruptured. The rupture of

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86837

The Mechanism of Thermal Destruction of
Solidified Epoxy Resins

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B016/B052

phenyl-hydrogen bonds probably leads to the formation of stable radicals and semiquinone structures. The singlet signals recorded by the authors indicate the presence of long-lived radicals. From these results the authors determined the activation energies of the three above-mentioned processes. For the resin solidified by maleic anhydride, they are 30, 26, and 53 kcal/mole, respectively; and for the resin solidified by polyethylene polyamine, they are 25, 35, and 44 kcal/mole. The authors also assume that processes (1) and (2) are related to the rupture of looser bonds, while process (3) is closely connected with the rupture of tight bonds. From their experiments the authors conclude that active radicals can not easily be detected by the available e.p.r. method, while this is possible in the case of weakly active radicals. They thank Z. P. Yegorova and O. L. Lependina for their assistance in taking spectra, and E. G. Gintsberg for the polarographic determination of aldehydes. L. A. Blyumenfel'd, A. V. Topchiyev, and V. V. Voyevodskiy are mentioned. There are 4 figures and 8 references: 7 Soviet and 1 British.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut
plasticheskikh mass (State Scientific Research Institute of
Plastics)

Card 3/4

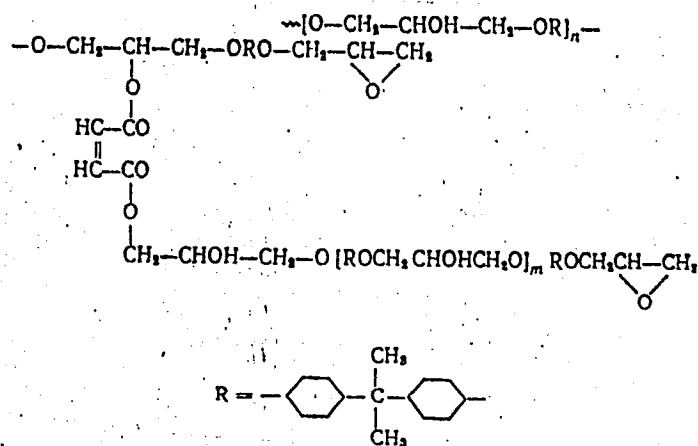
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The Mechanism of Thermal Destruction of
Solidified Epoxy Resins

S/020/60/135/005/027/043
B016/B052

PRESENTED: June 29, 1960, by V. A. Kargin, Academician

SUBMITTED: June 27, 1960



Card 4/4

GINTSBERG, E.G.; KOVARSKAYA, B.M.; STRIZHKOVA, A.S.

Study of the thermal destruction of condensation resins. Polarographic determination of aldehydes formed during the thermal destruction of epoxide resins. Plast.massy no.4:11-13 '61.

(MIRA 14:4)

(Epoxy resins)

(Formaldehydyde)

NEYMAN, M.B.; KOVARSKAYA, B.M.; YAZVIKOVA, M.P.; SIDNEV, A.I.; AKUTIN, M.S.

Destruction of condensation resins. Part 3: Thermooxidative destruction of hardened epoxy resins. Vysokom.soed. 3 no.4:602-606
Ap '61. (MIRA 14:4)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.
(Epoxy resins)

ACCESSION NR: AR4015668

S/0081/63/000/021/0490/0490

SOURCE: RZh. Khimiya, Abs. 21S116

AUTHOR: Usmanov, Z.; Kamenskiy, I. V.; Losev, I. P.; Kovarskaya, B. M.

TITLE: Synthesis and study of the condensation products of furfural with higher aliphatic ketones and the polymers based on them. Parts 1-3.

CITED SOURCE: Sb. Fizika i khimiya prirod. i sintetich. polimerov. Tashkent, AN UzSSR, vy*p. 1, 1962, 105-130

TOPIC TAGS: furfural, furfural condensation, aliphatic ketone, higher aliphatic ketone, ketone polycondensation, ketone based polymer crystallization

ABSTRACT: The authors studied the polycondensation of furfurylidene methylethyl- (I), furfurylidene methylpropyl- (II) and furfurylidene methylbutyl- (III) ketones. When heated to 240C in the presence of alkaline reagents, I forms a soluble and fusible polymer, which can be hardened under the influence of ionic catalysts (H_2SO_4 , benzenesulfonic acids (IV), Lewis acids). According to data from thermomechanical studies, hardening in the presence of IV proceeds in 3 stages: 1) a fusible, low-molecular, soluble tar; 2) a high-molecular tar, swelling in solvents; 3) an infusible and insoluble stereospecific polymer. Hardened tar prepared from

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ACCESSION NR: AR4015668

I shows increased thermal stability (up to 300C). Tars can be prepared from II and III in the presence of ionic catalysts and require longer heating periods due to the spatial effect of the alkyl radicals. V. Nemirovskiy

DATE ACQ: 09Dec63

SUB CODE: CH

ENCL: 00

Card 2/2

34998

S/190/62/004/005/011/023

B124/B101

15.8110

AUTHORS: Kovarskaya, B. M., Strizhkova, A. S., Levantovskaya, I. I.,
Shabudash, A. N., Neyman, M. B., Korshak, V. V., Vinogradova,
S. V., Valetskiy, P. M.

TITLE: Study of the thermal degradation of condensation resins. III.
Thermal degradation of heterochain polyesters (polyarylates)

PERIODICAL: Vysokomolekulyarnye soyedineniya, v. 4, no. 3, 1962, 433-439

TEXT: Thermal degradation of polyarylates on the basis of 4,4'-dihydroxydi-
phenyl-2,2'-propane (DDP) and terephthalic (polyarylate TD) or isophthalic
(polyarylate ID) acids prepared either in a high-boiling solvent (petroleum
ether) (TD(s) and ID(s), respectively) or by interfacial condensation
(TD(i) and ID(i), respectively) is studied in this paper. The yield points
of the polyarylates were: TD(s) ~ 340°C; TD(i) ~ 350°C; ID(s) ~ 260°C; ID(i) ~
270°C). Thermal degradation of the mentioned polymers was investigated
between 250 and 525°C. Evolution of gas sets in above 400°C, where 0.26-
0.42 mole CO, 0.30-0.60 mole CO₂, and 0.06-0.13 CH₄ per mole of the poly-
arylate structural unit are liberated. The liquid products of thermal
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B124/B101

Study of the thermal ...

degradation of TD(s) performed at 450°C show absorption bands at 1365, 1365 and 2970 cm⁻¹ characteristic of the methyl group, and at 1735 and 1250 cm⁻¹ characteristic of the ester bond. The split absorption band at 1735 cm⁻¹ indicates the presence of terephthalic acid, whereas the split band at 1600 cm⁻¹ shows free DDP to be present. The infrared spectrum of the solid residue of TD(s) after thermal degradation at 450°C for 1 hour does not contain bands which are characteristic of methyl groups, whereas bands characteristic of the ester bond are established in the infrared spectrum of the solid residue exposed to thermal degradation at 500°C for 1 hour. These bands are lacking in the spectrum of the product exposed to thermal degradation at 600°C for 20 minutes. Absorption spectra of the solid residue of TD(s) and DDP in the region of 700 - 900 and 1600 cm⁻¹ show that the concentration of phenyl rings increases after degradation leading to the formation of polyphenylene-like structures. These conclusions were confirmed by the EMR spectra of the residues of thermal degradation of TD(s) at 450, 500, and 600°C. A. A. Berlin and L. A. Blyumenfeld Vysokomolek. soved., 2, 1494, 1960; Zhurnal strukturnoy khimii 1, 103,

Card 2/3

S/190/62/004/012/015/015
B101/B186

AUTHORS: Alishoyev, V. R., Gur'yanova, V. V., Kovarskaya, B. M.,
Neyman, M. B.

TITLE: Non-additive effect in the stabilization of polyformaldehyde
by additions of polyamides and antioxidants

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 12, 1962, 1887

TEXT: It has been found that a joint addition of polyamide and anti-oxidant more effectively reduces the evolution of gas in the degradation of polyformaldehyde by thermooxidation than an addition of polyamide or antioxidant alone (Fig.). There is 1 figure.

SUBMITTED: June 14, 1962

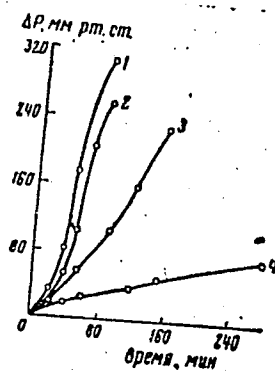
Fig. Increase of pressure in the oxidation of polyformaldehyde at 200°C, P_{O_2} = 200 mm Hg. (1) Without addition, (2) with polyamide,

(3) with antioxidant, (4) with polyamide - antioxidant mixture. Ordinate: ΔP , mm Hg; abscissa: time, min.

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Non-additive effect in the...

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B101/B186



Card 2/2

38064

S/191/62/000/006/004/016
B110/B138

15. 8121

AUTHORS: Moiseyev, V. D., Neyman, M. B., Kovarskaya, B. M., Zenova, I. Ye., Gur'yanova, V. V.

TITLE: Thermal destruction of condensation resins. Investigation of the thermal destruction of epoxy resins using tagged atoms

PERIODICAL: Plasticheskiye massy, no. 6, 1962, 11-15

TEXT: The destruction mechanism of epoxy resins was investigated by synthesizing epoxy resin ЭА-6 (ED-6), molecular weight 431 (19% epoxy groups), with the central carbon atom tagged, in diphenylolpropane. 1 g resin was heated in a glass ampoule, evacuated to $2 \cdot 10^{-2}$ mm Hg, for 1 hr at 300, 400, and 800°C. The destruction products were passed into (1) an empty, exhausted collecting flask cooled by a mixture of acetone and dry ice, and (2) into a similar flask cooled by liquid N₂ and filled with silica gel. To the first was added distilled water, and to the second a saturated solution of NaCl. The gaseous destruction products in the salt solution were examined by absorption gas chromatography (Al₂O₃), and the following were found to be present: (1) H₂ + CO + CH₄; (2) C₂H₆;
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B110/B138

Thermal destruction of ...

(3) C_2H_4 ; (4) C_3H_8 ; (5) C_3H_6 . The specific activity of the aldehydes in the first collecting flask was determined by A. P. Lukovnikov's method (ZhAkh, 11, 299, (1956)). The percentages by weight for H_2 , CO, CH_4 , C_2H_6 , C_2H_4 , C_3H_8 , C_3H_6 , solid residue, and aldehyde at $300^\circ C$ were respectively: - ; 1.18; 0.411; 0.025; 0.016; 0.015; 0.068; 98.4; and 0.00023; at $400^\circ C$: 0.0008; 1.17; 0.55; 0.039; 0.024; 0.022; 0.055; 98.1; - ; and at $800^\circ C$: 1.4; 5.89; 5.27; - ; - ; - ; - ; 87.44; - . Investigation of the activities showed that no losses had occurred. The 5 oe wide signal of paramagnetic resonance (10^{16} paramagnetic particles per g of material) corresponds to the signal of the thermal decomposition products of diphenylol propane. If n is taken as the number of repeating groups in the molecule, then $p = (n + 1)/(2n + 3)$, where p is the molar fraction of diphenylol propane. Then $M = 340 + n \cdot 284$, and $P_e = (86 \cdot 100)/(340 + n \cdot 284)$, where P_e is the content (in % by weight) of terminal epoxy groups. Values found for p : from the radioactivity, $p = 0.40$; from the molecular weight, $p = 0.32$; from the content of epoxy groups, $p = 0.38$. At $p = 0.37$, the resin consists chiefly of molecules with $n = 0$ and molecular impurities with $n = 1$. The small fractions of labeled material in the

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Thermal destruction of ...

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B110/B138

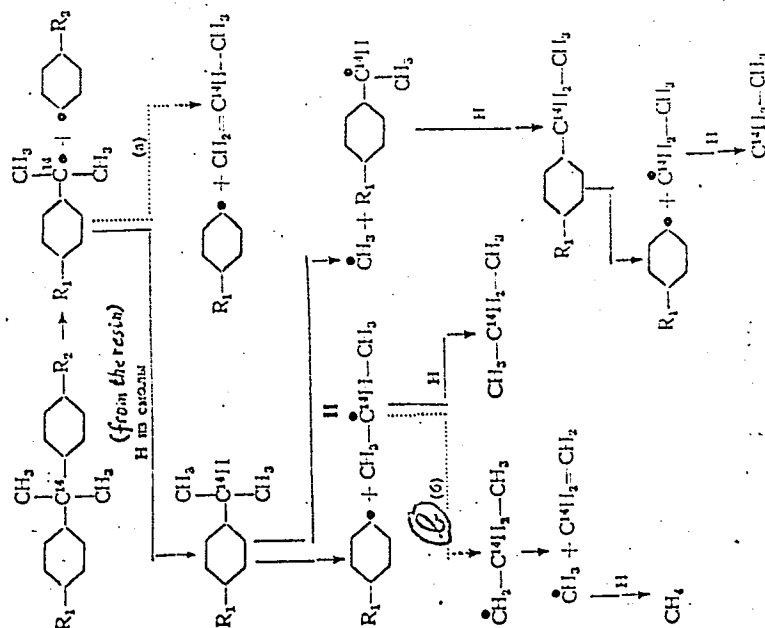
decomposition products (propane at 300°C = 4.6 %; at 400°C = 9.62 %) show that the decomposition products derive from the aliphatic part of the resin molecule. The mechanism is presumably

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Thermal destruction of...

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B110/B138

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Thermal destruction of ...

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B110/B138

The decomposition of radical I by reaction (a) (see Fig.) is inhibited by the stabilizing effect of the phenyl group. The isomerization of radical II by reaction 5 (b) requires ~ 17 kcal/mole. For this reason, only a small amount of labeled ethylene is formed. As shown also by the paramagnetic electron resonance spectra, the tagged central carbon atom of diphenylol propane participates in the formation of heat-resistant, condensed aromatic and other systems with conjugate double bonds. As the 912 cm^{-1} band of the epoxy group disappears in the infrared spectra of the solid decomposition products of the resin, stable free radicals are formed as reported by M. B. Neyman et al. (Vysokomol. soyed., 1, 10 (1959)). There are 5 figures and 3 tables.

Card 5/5

38715
S/191/62/000/007/002/011
B124/B144

15.8090
AUTHORS:

Alishoyev, V. R., Neyman, M. B., Kovarskaya, B. M.

TITLE:

Thermooxidative destruction and stabilization of
polyformaldehyde

PERIODICAL: Plasticheskiye massy, no. 7, 1962, 11-14

TEXT: The authors sought to obtain kinetic data on thermooxidative destruction and stabilization of polyformaldehyde in laboratory devices and during casting. The same temperature was kept in all parts of the reaction vessel to prevent polymerization. Five cells (Fig. 2) and a weighed portion of about 10 mg were used. Reaction vessel 1 with ground section was connected to the principal part of the apparatus, the weighed portion was added, and an Sn-Pb-Cd-Bi alloy introduced in the curved tube 2; the alloy on melting at test temperature isolated the reaction vessel from the measuring part of the apparatus. The pressure in the reaction vessel automatically balanced itself with that in the measuring part through the action of gases formed in the electrolyzer 3, this being checked in the manometer 4. Thereupon the reaction vessel was evacuated, oxygen was

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Thermooxidative destruction and ...

S/191/62/000/007/002/011
B124/B144

introduced through an opening in the alloy, the temperature in the reaction vessel and in the lower part of the curved tube was adjusted to $\pm 0.5^{\circ}\text{C}$ by way of a silicone oil thermostat. Fig. 3 shows the results from using a derivatograph on 140 mg of acetylated polyformaldehyde in the course of heating from 20 to 270°C at a rate of $3.3^{\circ}\text{C}/\text{min}$. The experiments showed that the kinetics of thermooxidative destruction were characterized by the curves for weight losses as well as by those for pressure increase. Whereas in the absence of oxygen the pressure at 145°C rises very slowly with an oxygen pressure of 600 mm Hg it rises at 145°C as follows: $\Delta P = Ae^{\varphi t}$, where $\varphi = 0.044 \text{ min}^{-1}$. In the same experiment, the induction period τ , during which the pressure rises slowly, is 115 min. An analysis showed that HCOH was the main product of thermal destruction, whereas CO, CO_2 , H_2O , and H_2 were formed besides HCOH in the thermooxidative destruction. No hydroperoxide was detected analytically. Oxygen takes part in the oxidation of the polymer and stimulates its thermal destruction. The results indicate a self-accelerating chain process with degenerate branching. When either the partial pressure of oxygen or the temperature rises, the autocatalysis

Card 2/8

HC906

S/191/62/000/010/001/010
B101/B186

15.8200
15.8530

AUTHORS: Heyman, M. B., Kovarskaya, B. M., Levantovskaya, I. I., Dral-
yuk, G. V., Iasvikova, M. P., Sidorov, V. A., Kochetkov, V. N.
Trossman, G. M., Tatevos'yan, G. O., Kuznetsova, I. B.

TITLE: Stabilization of polyamide films for agriculture

PERIODICAL: Plasticheskiye massy, no. 10, 1962, 6 - 8

TEXT: Protection of polyamide films, type 54, as used in hothouses and
silos, from effects of photo- and thermooxidation was tested by trying
various additives under various test conditions. The following were added
as ultraviolet light absorbers: 2-hydroxy-4-methoxy-benzophenone OMBP
(CMBF) (I), 2-hydroxy-4-alkoxy-benzophenone (a mixture of benzophenones
with various alkoxy groups of the type OC_7H_{15} , OC_8H_{17} , or OC_9H_{19}) (II), and
2-hydroxy-5'-methyl-benzotriazole (Tinuvin) (III). As antioxidants, KI
and copper naphthoate and organic stabilizers of the following type were
used: 1) derivatives of aromatic amines; 2) phenol derivatives; 3) aromatic
oxamines; 4) 2,6-ditert-butyl-4-methyl-phenyl-pyrocatechin phosphite (Ionol).

Card 1/2

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B101/B186

Stabilization of ...

Polyamide film blanks produced by condensation, namely hexamethylene adipate and ϵ -caprolactam at 260°C in an N-atmosphere, were subjected to thermo- and photooxidative action. Light sources were carbon-arc and mercury-quartz lamps, type ПРК-2 (PRK-2). Temperature in the test chamber was 70 ± 2°C. Thermooxidation measured by the drop in oxygen pressure was eliminated most efficiently by the pyrocatechin esters and phenyl- β -naphthyl-amine. It was found that stabilizers of the OMBF and Tuvin types act as antioxidants. Photooxidation experiments showed the following results: in most cases the elongation at rupture dropped even on initial exposure. After 200 hrs of exposure time, breaking tenacity of both stabilized and nonstabilized films fell by approximately 20 - 25%. Ageing time until embrittlement was determined. Without an inhibitor it began after 190 hrs of exposure to the light of an arc lamp. Optimum results were obtained with pyrocatechin esters (250 hrs), KI + copper naphthenate (260 hrs) and (Santovar) 9 ((2,6-di-tert-butyl-hydroquinone)) (240 hrs). Different action of the light from the arc lamps and the mercury lamps was explained by spectrum differences. Further field tests are recommended. There are 3 figures and 1 table.

Card 2/2

15 528

10909

S/191/62/000/010/002/010
B101/B186

AUTHOR: Kovarskaya, B. M.

TITLE: Thermal and thermooxidative destruction of some condensation polymers

PERIODICAL: Plasticheskiye massy, no. 10, 1962, 11 - 14

TR.T: Destruction analyses of some heat-resistant polymers are described, following upon previous papers by this author (Vysokomol. soyed., 1, no. 10, 1531 (1959); ibid. 3, no. 3 (1962); ibid. 3, no. 4, 602 (1961); DAN SSSR, 135, no. 5, 1147 (1960) Plast. massy no. 5 (1962)). These are: polycarbonate (I) based on 4,4'-dihydroxy-diphenyl-2,2'-propane, polyarylate (II) based on terephthalic acid, polyarylate (III) on the basis of isophthalic acid, and ЭД-6 (ED-6) type (IV) epoxy resin produced by condensation of 4,4'-dihydroxy-diphenyl-2,2'-propane with epichlorohydrine and cured with 30% maleic anhydride above 250°C. Thermal decomposition of I and II sets in above 400°C, that of IV above 250°C, thermooxidation of I, II, and III sets in at 250°C, that of IV at 200°C. Free radicals form on thermal decomposition. The mechanism of thermal decomposition differs in each in-
Card 1/2

Thermal and thermooxidative ...

S/191/62/000/010/002/010

B101/B186

vestigation but is characterized by accumulation of stable radicals. The molecular weight of I decreases after 40 min at 250°C, or after 10 min between 250 and 350°C, owing to the dependence on oxidation and temperature from $21 \cdot 10^3$ to $19 \cdot 10^3$, and to $\sim 16.7 \cdot 10^3$ in the casting cylinder. Hence, casting is assumed to be accompanied by thermooxidation and mechanical destruction, and in order to reduce the depth of destruction in the casting process it is recommended that transition of the resin into the viscous fluid state, should be accomplished in as short a time and at the lowest temperatures possible. There are 5 figures and 1 table.

Card 2/2

45650

S/191/63/000/003/005/022
B101/B186

15.8080

AUTHORS: Levantovskaya, I. I., Yazvikova, M. P., Dobrokhotova, M. K.,
Kovarskaya, B. M., Vlasova, K. N.

TITLE: Thermooxidative degradation and stabilization of some poly-
amides

PERIODICAL: Plasticheskiye massy, no. 3, 1963, 19 - 23

TEXT: This is a study of the kinetics of oxidation of polycaproamide (I),
polyamide 68 (II) (a polycondensate of the SH salt), and copolymer 548 (III)
(polycondensate of hexamethylene diamine adipate, hexamethylene diamine
sebacinate, and ϵ -caprolactam). The decrease in oxygen pressure was deter-
mined at initial $p_{O_2} = 200$ mm Hg and 130 - 200°C or at 200°C and changing

p_{O_2} . The kinetic curves of oxidation were s-shaped especially at low
temperatures or low p_{O_2} . The induction period was 10-20 min. A slower
drop in pressure at a longer oxidation time is explained by liberation of
Card 1/2

Thermooxidative degradation ...

S/191/63/000/003/005/022
B101/B186

gaseous oxidation products proved chromatographically in (I). At 130° and P_{O_2} = 200 mm Hg, O_2 was noticeably adsorbed by I and II, the stability of I

being larger than that of II. III was oxidized more easily than I and II. The effect of the following stabilizers was tested; 0.2% KI; 0.2% copper naphthenate; 0.1% KI + 0.1% copper naphthenate; 0.5% diphenyl amine; N-iso-propyl-N'-phenyl-p-phenylene diamine; N,N'-di-sec-octyl-p-phenylene diamine; N,N'-di-sec-nonyl-p-phenylene diamine; N,N'-di- β -naphthyl-p-phenylene diamine; phenyl- β -naphthyl amine (Neozone D); N-phenyl-n'-cyclohexyl-p-phenylene diamine; α - and β -naphthol; 2,6-di-tert-butyl-4-methyl phenol (ionol); 2,2-methylene-bis-(4-methyl-6-tert-butyl)-phenol (2246) propyl gallate; phenol styrene condensation product; mercaptobenzimidazole; tri-nonyl triphenylene phosphite; and polyphosphites as well as the photostabilizers 2-hydroxy-4-methoxy-benzophenone and 2,2'-hydroxy-5'-methyl-phenyl benzo triazole. Results: Aromatic amines were more effective than phenols and naphthols. N,N'-di- β -naphthyl-p-phenylene diamine was most active for I and II; Neozone D, however, for II. The mixture containing 0.1% KI and 0.1% copper naphthenate had a strong protective effect in I and II. There are 9 figures.

Card 2/2

L 10623-63

EPR/EPP(c)/EWP(j)/EWI(m)/BDS/ES(s)-2--AFFTC/ASD/SSD--Pa-4/
Pr-l/Pc-l/Pt-l--RM/MAY/WW

ACCESSION NR: AP3000687

5/0190/63/005/005/0644/0648

AUTHOR: Alishoyev, V. R.; Neyman, M. B.; Kovarskaya, B. M.; Gur'yanova, V. V.

TITLE: Thermooxidative degradation and stabilization of polyformaldehyde

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 5, 1963, 644-648

TOPIC TAGS: thermooxidative degradation, degradation, stabilization, poly-
amide, polyformaldehyde, PFA, 548-27, antioxidant, p-oxineozon, Santovar O, 22-46

ABSTRACT: A method has been developed and used to evaluate the effectiveness of individual polyamide resins⁵ (as acceptors of the evolving formaldehyde) and their combination with various antioxidants in stabilizing PFA polyformaldehyde¹² against thermooxidative degradation.⁵ The method is based on measurement of the pressure change in a special vessel enclosed in a thermostat containing a PFA sample exposed to oxygen and/or heat. Pressure change versus time curves are plotted and evaluated. Preliminary tests showed that at 125C in the absence of oxygen PFA decomposes very slowly. With oxygen present decomposition is much faster, shows an induction period, and yields formaldehyde, carbon oxides, hydrogen, and water. Screening of polyamide resins "54," "548," and "548-27" by formaldehyde-absorption tests showed that "548-27" is the best formaldehyde acceptor. Antioxidants⁵ such as "22-46"

Card 1/2

L 10623-63

ACCESSION NR: AP3000687

(2,2'-methylene-bis(4-methyl-6-tertbutyl)-phenol) or "p-oxineozon" [a p-hydroxy-phenyl-naphthylamine?] in combination with "548-27" were screened by the above method as additives to PFA at 200C and 200 mm Hg of oxygen. The most effective antioxidants in combination with "548-27" proved to be "22-46," "p-oxineozon", and Santovar "O." In the case of the "548-27"/"22-46" combination added to PFA in 2.5% total concentration the optimum polyamide to antioxidant ratio was 0.6/0.4. This figure, derived by the pressure-change-curve method, was in good agreement with the results of control studies of thermooxidation by thermogravimetric and differential thermal analysis. This work was done at the Scientific Research Institute of Plastics. Orig. art. has: 8 figures and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass (Scientific Research Institute of Plastics)

SUBMITTED: 05Oct61

DATE ACQ: 17Jun63

ENCL: 00

SUB CODE: CH,MA

NO REF SOV: 004

OTHER: 007

ch/ *Sw*
Card 2/2

L 10624-63

EPF(c)/EPR/EWP(j)/EWT(m)/BDS/ES(s)-2--AFFTC/ASD/SSD--Pr-4/
PB-4/P6-4/Pt-4--RM/MAY/WH

ACCESSION NR: AP3000688

S/0190/63/005/005/0649/0654

AUTHOR: Kovarskaya, B. M.; Akutin, M. S.; Sidnev, A. I.; Yazvikova, M. P.;
Neyman, M. B.

TITLE: Investigation of the thermooxidative decomposition of a polycarbonate

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 5, 1963, 649-654

TOPIC TAGS: Diflon, polycarbonate, thermooxidative degradation, thermooxidative decomposition

ABSTRACT: The thermooxidative degradation of the Soviet polycarbonate "Diflon" (mol. wt., 18,000) has been studied. Thermooxidation was carried out at 240 to 300C and 92 to approximately 700 mm Hg of oxygen with equipment described previously by the authors (M. B. Neyman, B. M. Kovarskaya, M. P. Yazvikova, A. I. Sidnev, M. S. Akutin, Vysokomolek. soyed., 3, 602, 1961). It was found that the initial rate of change of pressure in the system, i.e., the oxidation rate (W_0) is directly proportional to the oxygen pressure and increases with temperature according to the law $W_0 = a \exp(-E/RT)$, where $E = 36,500$ kcal/mol. The weight

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L 10624-63

ACCESSION NR: AP3000688

loss of Diflon at 300C and constant initial oxygen pressure increases linearly with time after a certain initial period; the higher the initial pressure, the greater the loss. Analysis of the degradation products revealed CO_2 , CO, H_2 (traces), H_2O , CH_2O , and bis(hydroxyphenyl)propane; hydroperoxides were not detected. It was concluded that the degradation is an autoaccelerating chain reaction with degenerate branchings which are evidently due to hydroperoxide decomposition. The reaction is speeded up by the presence of impurities introduced in the starting materials. Special preliminary purification of Diflon by multiple reprecipitation improved oxidation stability by about 50%. An oxidation mechanism is suggested which shows that oxidation not only gives rise to gaseous products but also alters the structure of the polymer chains in which aldehyde and hydroxy groups accumulate. This is confirmed by the fact that the thermal stability (in the absence of oxygen) of oxidized Diflon is far lower than that of the initial Diflon, owing probably to the decomposition of the aldehyde groups and to additional oxygen-containing groups which facilitate ester bond cleavage. Orig. art. has: 10 formulas and 8 figures.

Scientific Research Institute of Plastics

Card 2/2

ACCESSION NR: AP3001579

S/0191/63/000/006/0026/0029

AUTHOR: Akutin, M. S.; Kotrelev, V. N.; Kovarskaya, B. N.; Kostryukova, T. D.;
Tarasov, V. V.; Sidnev, A. I.; Rodin, E.; Nitcha, O. N.; Neyman, M. B.

TITLE: Casting of polycarbonates under pressure.

SOURCE: Plasticheskiye massy, no. 6, 1963, 26-29

TOPIC TAGS: Diflon, polycarbonate, thermal oxidation

ABSTRACT: The change in molecular weight and mechanical properties of a polycarbonate "Diflon" under laboratory oxidation and on pressure-casting was studied. Polycarbonates are destroyed more rapidly by pressure casting than by thermal oxidation. Apparently, this acceleration is combined with the

or destruction. Orig. art. has: 9 figures, 1 table and 1 equation.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 01Jul63

ENCL: 00

Card 1/2

KARGIN, V.A., akademik; NEYMAN, M.B., prof.; BUCHACHENKO, A.L.,
kand. khim. nauk; MIKHAYLOV, V.V.; MASLOVA, I.P.;
LUKOVNIKOV, A.F., kand. khim. nauk; MATVEYEVA, Ye.N.;
BERLIN, A.A., prof.; YANOVSKIY, D.M., kand. khim. nauk;
POPOVA, Z.V., kand. khim. nauk; LEVANTOVSKAYA, I.I.;
KOVARSKAYA, B.M., kand. khim. nauk; ANDRIANOV, K.A., prof.;
KUZ'MINSKIY, A.S., prof.; SLONIMSKIY, G.L., prof.; MAKUNI,
Ye.B., tekhn. red.

[Aging and stabilization of polymers] Starenie i stabilizatsiya polimerov. Moskva, Izd-vo "Nauka," 1964. 330 p.
(MIRA 17:3)

1. Akademiya nauk SSSR. Institut khimicheskoy fiziki.
2. Chlen-korrespondent AN SSSR (for Andrianov).

ACCESSION NR: AP4016284

Z/0043/64/000/001/0013/0020

AUTHOR: Kovarskaja, B. M. (Kovarskaya, B. M.)

TITLE: Decomposition of polycarbonates

SOURCE: Chemicke zvesti, no. 1, 1964, 13-20

TCPIC TAGS: polycarbonate, casting conditions, polycarbonate pyrolysis, exposure length, decomposition product, decomposition rate, impurity influence

ABSTRACT: Polycarbonates resist quite high temperatures; even a steady 400C may be tolerated. Heating to higher temperatures causes a sharp increase in decomposition as shown in Fig. 1 of Enclosure 1. Gases liberated by pyrolysis are hydrogen, carbon monoxide and dioxide, methane, ethane and traces of propane. Infrared spectral analysis after exposure to 500C shows formation of benzene rings. It seems that methyl groups are liberated from diphenylpropane, and ether bonds are decomposed with liberation of carbon oxides. Original rate of oxidation is proportional to reaction pressure and increases exponentially with

Card 1/2

ACCESSION NR: APL016284

temperature. The process of oxidation is an autocatalytic chain reaction, and its rate is increased by some of the impurities in the polymer. Repeated precipitation from a chloroform solution with methanol and washing with acetic acid substantially increases thermal stability of polymer as shown in Fig. 4 of Enclosure 2. Casting methods of formation of polymer reduce the molecular weight of polycarbonates according to the temperature to which the polymer is exposed and the period of exposure as shown in Figures 6a and 6b of Enclosure 3. Samples cast at 350C contain substantially higher amounts of low-molecular weight fraction than those prepared at 250C. Changes in tensile strength as a function of molecular weight are shown in Fig. 8 of Enclosure 4. The change from solid to liquid state should take place at as low a temperature as fast as possible. Orig. art. has: 8 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut plastmass, Moscow (Research Institute for Plastics)

SUBMITTED: 14Jun63

DATE ACQ: 14Feb64

ENCL: 04

SUB CODE: CH, MA

NO REF SOV: 004

OTHER: 003

Card 2/6 2

ACCESSION NR: AP4018159

S/0191/64/000/003/0014/0017

AUTHORS: Levantovskaya, I.I.; Kovarskaya, B.M.; Neyman, M.B.;
Rozantsev, E.G.; Yazvikova, M.P.

TITLE: Inhibiting the thermal oxidative destruction of polyamides
with aromatic amines and radical type stabilizers

SOURCE: Plasticheskiye massy*, no.3, 1964, 14-17

TOPIC TAGS: polyamide, thermal oxidation, oxidation inhibition,
antioxidant, phenyl beta naphthylamine, piperidine nitric oxide,
piperidone nitric oxide, radical type stabilizer, induction period

ABSTRACT: The inhibition of thermal oxidation of polyamides with
phenyl-beta-naphthylamine and with the free radical type stabilizers
2,2,6,6-tetramethylpiperidone nitric oxide and 2,2,6,6-tetramethyl-4-
ethyl-4-hydroxypiperidine nitric oxide was investigated. The radical
stabilizers display marked inhibition of thermal oxidation. Less
than half of the original amount of aromatic amine is spent during
the induction period in inhibiting polyamide thermal oxidation; inhi-

Card 1/2

ACCESSION NR: AP4018159

bition of oxidation at the end of the induction period apparently depends on the remaining unspent antioxidant. Unlike the aromatic amines, the free radical inhibitors retard the oxidation of polyamides until they are completely consumed. At the end of the induction period the rate of oxidation with these radical inhibitors approaches the rate of oxidation of the uninhibited polymer. Orig. art. has: 8 figures and 2 formulas.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 27Mar64

ENCL: 00

SUB CODE: CH

NR REF SOV: 008

OTHER: 000

Card 2/2

KOVARSKAYA, B.M.; ZHIGUNOVA, I.Ye.

Degradation of epoxy phenol resins. Plast.massy no.7:17-19 '64.
(MIRA 17:10)

KOVARSKAYA, B.M.

Production of stabilizers is a most important task of the
chemical industry. Plast. massy no.8:1-2 '64.

(MIRA 17:12)

KOVAESKAYA, B.M. [Kovarskaya, B.M.]

Destruction of polycarbonates. Chem zvesti 18 no.1:13-20 '64

1. Vyskumny ustaz plasticheskikh letok, Moskva.